



2nd Edition: City of Flagstaff Museum Flood Q&A

Contents

Sandbags	1
Residential services	1
Coordination with partner agencies/ Volunteers.....	2
Flood Events	2
Infrastructure Bill	2
Modeling	3
Mitigation/ Feasibility Study.....	3
Feasibility Study	3
Burn Scar Mitigation Work	3
Mitigation Within City Limits.....	4

Sandbags

Are there any other ideas in relation to safer, less dangerous ways of getting up and over the four-foot walls July-October without scaling them?

Short-term mitigation measures such as sandbags have functioned well to protect property and residents. The City understands that the inconvenience is great and we will continue to work on longer-term mitigation measures and new ideas to improve access.

Residential services

What should residents do with their trash?

Regular trash and recycle carts should be placed in the road next to sandbags or other mitigation measures. Residential trash and recycle pickup will be provided on the scheduled days. Residents may continually leave their trash and recycle carts in the roadway next to mitigations. Any carts lost due to storm events will be replaced free of charge. Bulky trash items should be placed in the road prior to the collection time period. The City’s Solid Waste team will monitor the bulky items set out and may assign additional collections if needed, especially prior to expected rain events.

Where are we parking when we can't park in the street?

The City encourages residents of Grandview to park on neighboring residential streets during flooding storm events. This allows for safer clean-up operations.



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Coordination with partner agencies/ Volunteers

Two key partners are the County Flood District and the United Way. In cases where a partner takes the lead on an aspect of the response (such as managing a central call center or managing volunteers), how does the City continue to provide oversight and support? What role does the City have in making sure that City residents are getting the services that that partner has agreed to provide?

The City has strong partnerships with both the Coconino County Flood Control District and the United Way. All agencies involved faced limited resources during the response to flood events and the volunteer coordination and support were meaningful. If residents have ideas about how volunteers could be used in additional capacities or how services could be improved, they are welcome to share them with the City.

Will the City take another look at utilizing Americorps NCCC, which is a federal resource available for disaster response and preparedness?

The City will continue to investigate all opportunities to support our response.

How does the City intend to utilize volunteers in extending the level of outreach and services that they can provide with paid staff? What areas would be appropriate for utilizing volunteers?

The City is preparing a comprehensive communication strategy that will include a variety of communications methods, including newsletters, project flyers, videos, a project website and regular public updates at Council meetings. Within this communications strategy, volunteers could be utilized to distribute printed newsletters or project flyers to impacted residential areas. Volunteers could also assist in spreading the word about upcoming updates at Council meetings.

Flood Events

How many cubic feet per second can the Dortha Inlet handle? What was the flow on August 17th?

No comment due to pending notice of claim.

Did any properties outside of the FEMA floodplain designations have internal or external flooding?

No specific comment due to pending notice of claim. The County and City recommend that residents in the Museum Flood Area obtain flood insurance regardless of the 2010 FEMA flood insurance map.

Please visit <https://www.fema.gov/glossary/flood-zones> for more information.

Water during the flood events came from the north, but it also flowed east or west in some areas. Why did it do that?

Flood waters follow gravity (down gradient) and at times are also impacted by currents created by bottlenecks or constrictions.

Infrastructure Bill

Mayor Deasy mentioned that they would be discussing the infrastructure bill at the Budget Retreat. What was discussed?



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The Infrastructure Investment and Jobs Act (IIJA) was discussed during the December 9, 2021 budget retreat. Staff noted that there are several areas within the IIJA which could result in potential funding for stormwater infrastructure and mitigation but are waiting for more details to be released from the federal government on specific grant programs and other funding mechanisms. The presentation from the budget retreat can be viewed [here](#). A recording of the budget retreat can be viewed [here](#).

Modeling

Has the new flood modeling been completed and if so how do we obtain a copy of that?

The flood model has not yet been completed. Once it is finalized, the City will disseminate the results as appropriate.

Does the new modeling that JE Fuller is completing take into account the erosion and altered topography from the 2021 summer floods? Are they using the same data for the ground measurements as they did in the first round of modeling or not? How much does this alter the analysis?

The model is based on a survey flight flown in late 2021. The model will incorporate the topography at the time of the flight, this includes any large changes to the topography since the 2019 flight.

Mitigation/ Feasibility Study

Feasibility Study

Has the feasibility study on the current conveyance and possible expansion been completed? If so what are the results of this study and what will be done with this information moving forward?

The first task of the feasibility study is to determine the possible capacity of improvements along the Spruce Wash channel from just upstream of the Linda Vista crossing to Route 66. This work is currently in peer review and includes maximizing stormwater conveyance using a series of box culverts, large diameter pipes and expansion and lining (concrete) of the existing open channel. Once complete, this information can be used for capital planning and for seeking funding for further design and implementation. Future tasks of the feasibility study could include alternate conveyance systems that do not follow the current wash alignment if additional capacity is needed beyond what can be done within the existing Spruce Wash alignment. The results of this first task of the feasibility study will be presented to City Council in one of the regularly scheduled work session updates. The City will advertise these work session updates to the community.

Burn Scar Mitigation Work

We have been told that Natural Channel Design will be completing the mitigation work on the burn scar with the money provided by the Forest Service. Who will be overseeing this project? How will information of their proposed work be shared with the public and who is the best contact for this project?

This project will be overseen by the Coconino County Flood Control District (FCD). Information about this project will be shared with the public through communications from the FCD through the Museum Flood email distribution list and other channels as appropriate.



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Mitigation Within City Limits

Is there any forward movement on possible retention ponds within city limits?

The City partnered with Flagstaff Unified School District to design two new detention ponds that will double as play fields at the new Killip Elementary School. The detention ponds are designed to store approximately 11 acre-feet of stormwater (~3.5 MG). Much of the stormwater that isn't conveyed through the pipe at Arroyo Seco will overflow into Ponderosa Park to these new ponds. A pipe will be installed at the outlet of these basins and will connect to the existing pipe in 3rd Street. This will allow the basins to drain so they don't retain water which becomes a safety and health concern as well as reducing capacity for future storm events. This work is scheduled for completion prior to monsoon season of 2022.

The County secured funding from NRCS for design and installation of sediment basins just upstream of the Linda Vista crossing and within the City limits. These basins are intended to capture debris and sediment, thereby reducing the threat of stormwater infrastructure clogging and for downstream damages by debris and sediment.

Is the city owned parcel near Grandview still being looked at as holding areas for water as was an idea from the engineering summit?

The first phase of the feasibility study is analyzing the capacity of the existing system along Spruce Wash. The second phase of the feasibility study may consider this and other possible opportunities, if there is need and funding for additional capacity. All public properties are still in play and being evaluated in the later stages of feasibility.

Is it true that the current mitigation is only being completed for a 1-inch flood event? If so why?

It is not true that mitigation is being planned to any rain intensity threshold. Mitigation measures are being designed as best as possible based on funding and the constraints of the urban environment. Due to physical and resource constraints, it is impossible to mitigate against all potential rain events.

How much water will the proposed NRCS retention ponds hold? I know a strong focus is to reduce the amount of sediment coming down the mountain but how will the amount of water flowing down Grandview be impacted by this?

The sediment basins are intended to reduce sediment and debris loads into the site water system. This may reduce the initial rising limb of the flood as a secondary impact but that has yet to be modeled; channel rehabilitation and sediment retention are the primary purpose of the structures. More information will be available as we continue to model storm events.

Please provide an explanation on the changes upstream of the city and their impact on exactly how much they will slow flows, lower sediment, height of water and it's interaction with the culvert on Linda Vista.

The City is evaluating the potential impacts through the model and feasibility study. This is an ongoing effort and more information will be communicated when it is available.



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Why have there been different maps modeling what the flooding would look like?

Flood hazard maps produced by JE Fuller are intended to be illustrative only and cannot predict every possible outcome during rain events.

The neighborhood impacted had requested several times that although we have local experts could some "outside eyes" please be put on the burn scar for mitigation ideas. Did this ever occur?

The Museum Flood Engineering Summit held in the summer of 2021 including regional engineering firms as well as federal and state agencies. JE Fuller and Natural Channel Design are both leaders in the field of post-fire flood response.

What's the protocol for responding to when residents take mitigation measures into their own hands? And they're doing things that might cause unintended consequences for other neighbors.

The City can enforce code violations if they are found to be occurring. Issues outside of City code must be resolved between the landowners under State law.